Pioneer Research Anahita Company
No.157
Danesh street
Technology Park Pardis
Tehran/ Iran

DATA SHEET
Versions: 01
Revision date: 25/11/2023

1. Identification

Product name: Catalase Activity Assay Kit

Reactions: 100 rxns

Cat. No.: PRA-CAT

2. Description

Catalase is a vital enzyme that utilizes hydrogen peroxide, a nonradical reactive oxygen species (ROS), as its substrate. This enzyme plays a crucial role in neutralization by decomposing hydrogen peroxide, ensuring the maintenance of an optimal level of this molecule within the cell. This balance is essential for various cellular signaling processes, highlighting the significance of catalase in cellular homeostasis.

3. Kit Contents

Component	Cat. no
Solution A	PRA-CATa
Solution B	PRA-CATb
Solution C	PRA-CATc

4. Storage specifications

Catalase Activity Assay Kit components can be stored at room temperature.

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5. Applications

1. Catalase Applications:

- Catalase is utilized in the food industry for removing hydrogen peroxide from milk before cheese production.

- It is employed in food wrappers to prevent oxidation of food.

- In the textile industry, catalase is used to eliminate hydrogen peroxide from fabrics, ensuring peroxide-free materials.

2. Catalase Test in Bacteria Detection:

- The catalase test is a valuable tool for detecting catalase in bacteria.

- It plays a crucial role in differentiating catalase-positive Micrococcaceae from catalase-negative Streptococcaceae.

- While primarily used for genus differentiation, it is also beneficial for the speciation of certain gram-positive bacteria.

6. Assay Procedure

Preparation of Solutions:

Solution A: To prepare solution A, add 20 ml of distilled water.

Working Solution:

Mix the prepared solution A in a ratio of 1 to 3 with acetic acid in the required amount. For example, mix 100 µl of solution A with 300 µl of acetic acid. (Solution A mixed with prepared acid is stable for 48 hours in a dark place). Solution B and C should be mixed before testing. Accordingly, mix them in proportions of 1/200. For example, if you need to test 4 samples, mix 995 µl of solution B with 5 µl of solution C. (The mixture is only stable for 48 hours and must be prepared immediately before testing).

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Test Method:

1. Keep the kit components at room temperature for 20 minutes before starting the test.

2. Add the ingredients according to the table below in 1.5 ml microtubes.

	Test	Negative Control	Standard	Blank
Sample	50 µl	50 µl	-	-
Distilled water	-	250 µl	50 µl	250 µl
Mix B and C solution	250 µl	-	250 µl	-

3. Incubate all tubes for 3 minutes at 37°C and then add 500 µl of mixed solution A and acetic acid.

4. Incubate all tubes at 100°C for 10 minutes and then centrifuge at 2500 rpm for 5 minutes.

5. Transfer 200 µl of the supernatant to the wells of the ELISA plate and assess its OD at 570 nm.

6. Use the following formula to calculate catalase activity:

Catalase activity (KU/L) = 2.303/3 × [S'/S-M] × VT/Vs

- S' = Absorbance of standard
- S = Absorbance of Test
- M = Absorbance of negative control
- VT = Total Volume
- VS = Volume of the sample

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7. Safety

- The solutions used in this kit are dangerous for human tissue.
- Work with gloves and protective eye wear.
- In case of contact with skin, eyes, etc., wash with plenty of water.
- Seek medical attention promptly for additional treatment.

8. Quality Certifications

9. Further information

This product is developed, designed, and sold exclusively only for research purposes use. The product was not tested for use in diagnostics or for drug development, nor is it suitable for administration to humans or animals.

10. Other Kits

1. Total Antioxidant Activity Test Kit (FRAP)
2. Catalase activity testing kit
3. Kit to check the amount of NO
4. FRAP Assay test kit
5. Paraoxonase-1 activity testing kit
6. Protein carbonyl testing kit

NOTE

All products have been produced by Karmania Pars Gene company in Iran.